

AMENDMENTS TO THE CLAIMS:

The below listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS:

64. (Previously presented) An intracorporeal device comprising an elongated member having means for causing a substantially linear change in stiffness over a longitudinal length of the elongated member.

65. (Previously presented) The device of claim 64 wherein the length of the elongated member has a continuously changing taper angle producing a curvilinear profile that is configured to produce the substantially linear change in stiffness over said length.

66. (Previously presented) The device of claim 64 wherein the elongated member has a plurality of tapered segments configured to produce the substantially linear change in stiffness over the length of the member.

67. (Previously presented) The device of claim 64 wherein each tapered segment has a substantially constant taper angle.

68. (Previously presented) The device of claim 66 wherein the elongate core member comprises at least 3 to about 100 tapered segments.

69. (Previously presented) The device of claim 64 wherein the elongated core member comprises a material with changing hardness in a longitudinal direction configured such that the change in hardness produces a substantially linear change in stiffness along the length of the core member.

70. (Previously presented) The device of claim 64 wherein the elongated member tapers distally to a more flexible distal portion.

71. (Previously presented) A guidewire comprising an elongate core member with at least one longitudinal section having a diameter defined substantially by the formula:

$$D_L = \left[\frac{64CL}{E\pi} + D_0^4 \right]^{\frac{1}{4}}$$

where D_L is the diameter of the elongate core member at length L from a position of starting diameter D_0 , E is the modulus of elasticity of the core member material, and C is a constant that depends on the boundary conditions of the longitudinal section.

72. (Previously presented) A guidewire as defined in claim 71, wherein said core member is formed of one of the group constituting stainless steel, NiTi alloys and combinations thereof.

73. (Previously presented) A guidewire as defined in claim 71, wherein said core member has a proximal core section, said proximal core section being coated with a lubricious coating.

74. (Previously presented) A guidewire as defined in claim 71, wherein said core member has a distal core section, said distal core section being coated with a lubricious coating.

75. (Previously presented) A guidewire as defined in claim 71, wherein said core member has a distal core section, and a flexible body disposed about and secured to the distal core section.

76. (Previously presented) A guidewire as defined in claim 71, wherein the guidewire comprises at least 3 to about 100 tapered segments.

77. (Previously presented) A guidewire as defined in claim 71, wherein the guidewire comprises at least 5 to about 20 tapered segments.

78. (Previously presented) A guidewire comprising an elongate core member with at least one longitudinal section having a moment of inertia defined substantially by the formula:

$$I_L = \frac{CL}{E} + I_0$$

where I_L is the moment of inertia of the longitudinal section at length L from a position of starting inertia I_0 , E is the modulus of elasticity of the longitudinal section, and C is a constant that depends on the boundary conditions of the longitudinal section.

79. (Previously presented) A guidewire as defined in claim 78, wherein said core member is formed of one of the group constituting stainless steel, NiTi alloys and combinations thereof.

80. (Previously presented) A guidewire as defined in claim 78, wherein said core member has a proximal core section, said proximal core section being coated with a lubricious coating.

81. (Previously presented) A guidewire as defined in claim 78, wherein said core member has a distal core section, said distal core section being coated with a lubricious coating.

82. (Previously presented) A guidewire as defined in claim 78, wherein said core member has a distal core section, and a flexible body disposed about and secured to the distal core section.

83. (Previously presented) A guidewire as defined in claim 78, wherein the guidewire comprises at least 3 to about 100 tapered segments.

84. (Previously presented) A guidewire as defined in claim 78, wherein the guidewire comprises at least 5 to about 20 tapered segments.